Consumer Electronics Appendix to Joint Status Report to FCC[1]

As the world's most innovative consumer electronics product manufacturers, we feel it is critical for the Commission to understand that we are at an important juncture in the creation of a competitive market for interactive digital cable-ready equipment. Collectively, the "CE side" of the ongoing cable-CE industry negotiations[2] knows the marketplace, and we know what consumers desire when it comes to televisions and other innovative CE products, such as digital video recorders and personal computers that can display TV programming. Vigorous competition among digital television manufacturers has resulted in consumer benefits unseen in most other product categories in the consumer electronics industry or elsewhere. Because of this spirited market, consumers are able to obtain larger and better televisions and other more advanced entertainment devices, equipped with more features, at a fraction of the cost only a few years ago. Consumers will benefit similarly if a robust market is achieved for interactive digital cable-ready products. This can be achieved only if the result of these negotiations and the implementing regulations is a market that truly allows television manufacturers to differentiate their products when displaying interactive digital cable programming.

As we see it, public policy affords two options. One, enable a competitive market for interactive digital cable-ready products, catalyzing innovation which in turn will result in more consumer choices, better products, better service, and lower prices. Or two, allow cable operators to extend their dominant market power in consumers' homes, starkly limiting innovation and consumer choice. The draft set of outcomes, provided below, is based on our view that the joint cable-CE industry recommendation should support and enable the first option.

Fully nine years ago, in 1996, the Congress enacted Section 629 of the Communications Act, requiring that FCC rules *assure* the competitive commercial availability of "MVPD" devices from manufacturers and vendors *not* affiliated with the MVPD service provider. The Commission's 1998 regulations implementing Section 629 followed the competitive principles established in deregulating the telephone monopoly. Part 76.1201 - 1205 limits the constraints that may be placed on licensed competitive devices to "harm to the network" and "protection against theft of service." *Yet seven years later, there are no competitive devices that work bi-directionally on digital cable systems,* and the only available licenses for even developing a bi-directional product place fundamental restraints on features, functionality, and innovation that far exceed any prior conception of "harm to network" or "theft of service."

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[1] In the October 2005 joint briefing, the Commission staff requested that in the next written report, the parties provide a set of draft regulations reflecting progress to date, and in areas where no joint drafts yet exist, provide their own versions or reports. The jointly drafted portion of this Joint Status Report contains a list of agreements in principle, for which no draft joint regulations are yet available. Accordingly, the "CE" side has supplied, with this filing, a set of draft regulations reflecting our view of necessary outcomes if this process is to serve consumers and the public interest.

[2] The term "CE" in this context includes elements of the Information Technology industry, which is represented in the consumer electronics caucus.

The 'Plug & Play" negotiations to date reflect the differing visions of two industries as to what real competition entails. The cable industry vision is evident from the technologies and license agreements that its CableLabs consortium has offered. In our view this approach does not fulfill the requirements of either law or regulation:

- The technologies, though offered for competitive as well as leased devices, are designed primarily for support of proprietary leased devices, and are dedicated almost entirely to cable system functionality.

- The licenses offered by CableLabs impose potential constraints on competitive features and functions that go well beyond protecting against electronic harm to the network or theft of cable services.

- At present, any potential entrant must choose between signing on to this technology and these agreements, or forgoing access to the cable television market, a market that serves 70 percent of all American households. This is why we persist in negotiating toward a more competitive framework.

Eighty-seven percent of Americans subscribe to MVPD services, which are increasingly interactive in nature. Many Americans now spend more on entertainment than they do on food or medical care.[3] Whether or not there is a competitive result in these negotiations will determine whether there is to be competition in the market for home entertainment products, or whether, however sourced, navigation and other home entertainment products are to be tailor-made exclusively for the needs of the service provider, rather than for the needs of the service provider's customers and in deference to the intention of Congress for competitive, nationally transportable navigation devices.

The Fundamentals for Competitive Choice – A CE Perspective

The draft regulations attached below are aimed at achieving a framework that addresses the following public policy issues:

- The scope of cable operator control over "cable service" and product design
- Common infrastructure & system reliance
- Protection of consumer investment
- Joint participation in the approval of standards

The scope of cable operator control over "cable service" and product design

A recurring, fundamental disagreement between the cable and CE sides concerns the extent to which a cable service's control over presentation should extend into the design and control of competitive multifunction devices, peripherals and the home

[3] Damon Darlin, *How to Tame an Inflated Entertainment Budget*, November 19, 2005. Available at http://www.nytimes.com/2005/11/19/business/19money.html.

network itself. Competing definitions of "cable service" have furthered this disagreement. The cable perspective has been that all features of navigation devices, both competitive and otherwise, are part of the cable service to which a consumer subscribes, and therefore, all devices should present interactive cable MVPD services exactly and exclusively as if presented by a leased cable set top box ("STB") that is entirely under the cable operator's design and control.

This conception is not consistent with how consumers view the products and services they purchase, nor should it be. The CE side seeks to establish, in the spirit of both the Act and subsequent FCC regulations, an understanding of the reach of "cable service," consistent with both the definitions of service generally accepted for unidirectional digital cable receivers and terrestrial digital television receivers. In these respects, a "cable service" is essentially its audiovisual content and the associated method of accessing that content (including the descriptive and navigation data and the way the offering is presented to the consumer, such as order of program listings, program name, duration, program description and logical channel name (*e.g.*, "Discovery" or "MTV")). Such a definition of service also aligns with consumers' expectation of what they subscribe to, pay for and obtain from the cable service provider.

Consumers expect more, not less, flexibility from and user control over items they own, compared to boxes that they are obliged to lease They may, if they wish, *choose* to purchase competitive devices that only run software designed with the look and feel of the MSO's leased product offering. However, Section 629 was not intended to be a vehicle for expanding the scope of cable operator control over "cable service" to the point that consumers lack choices in the competitive navigation and home network devices that are made available in the retail market—in fact, quite the opposite is true. In the consumer's view, there is a distinct difference between the role of the MVPD operator when a consumer uses the MVPD operator's leased navigation device and the operator's role when the consumers use their own navigation devices or integrated television receivers purchased in the retail marketplace. In the former situation, the MVPD operator is responsible for providing services as well as the navigation device and supporting software. In this role, the MVPD operator is able to define and control the features, look, method of user interaction, quality and performance of the device.

In the latter situation, by contrast, the role of the MVPD operator is to provide cable service, as defined above; the consumer looks to the competitive product manufacturer to define the product features and functions. Ultimately, consumers will indicate their preferences through selection among competing retail navigation devices at time of purchase.

A competitive device that presents the cable content without harming the network or enabling theft of service is a complete product for navigating cable services. Cable operators' desire to exercise control over the design of competitive products, in the guise of preserving the cable service, is unjustified and would lead to the stifling of innovation and variation in competitive products. It should be remembered that the cable operator, by offering navigation devices directly to the consumer, is a direct competitor to the entrant whose entry Section 629 was aimed at facilitating and assuring.

Common Infrastructure and System Reliance

The historically closed market for navigation devices is a byproduct of past reliance on proprietary specifications. The market, and cable industry support for devices, remains heavily biased toward the incumbent proprietary devices. A successful introduction of competitive retail devices requires that the quality of service provided to both leased and competitive, consumer-owned devices be equivalent. The CE-side believes, and the Commission has recognized, that "common reliance" is an efficient means for limiting the dominance enjoyed by the proprietary, leased devices, thus leveling the playing field for competitive devices. In short, the system operator's products must be required to use the same services, applications and support infrastructure for accessing cable content and associated data as the competitive devices are required to use, so that operator avoidance of, and response to, any network impairment will affect both categories of device equally. This common reliance motivates both parties to act promptly to resolve problems in the interest of their common customer. It also preserves both parties' ability to differentiate their respective products.

Protection of the Consumer Investment

Moving to a truly competitive retail environment will create substantial benefits for consumers. An interdependent system, however, does not come without risk. Even with proper prior testing, changes in the service provider's system can mean that some devices might not work right "out of the box." Some devices might work initially but fail sometime in the relatively near future. Both cases impair consumer confidence and their acceptance of new technology, resulting in a diminished market for competitive devices.

The consumer purchasing a competitive retail navigation device also has an expectation of "product lifetime"-- a period during which it is reasonable to expect that the product will continue to perform and remain compatible with the signal delivery method.[4] The CE side recognizes the importance of these issues and places the consideration of consumer confidence and their lifetime expectations foremost in the process of making new technologies available at retail.

A significant way to bolster consumer confidence and thereby accelerate market acceptance of new technology is through a proactive process to protect the consumer's investment from premature obsolescence. A positive consumer experience demands that improvements to the operator's network, its services, or any operator supplied downloaded applications must not result in harm to existing products attached to the network or any impairment of the product's function or performance. The attached, proposed regulations include requirements for versions of interactive cable applications to be supplied for the support of competitive devices even after newer technologies become available and are adopted in newer devices.

Additionally, apart from the proposed FCC regulations, the CE side requests that a joint Cable-CE body be formed and charged with the responsibility to collectively make

[4] Some states have gone so far as to enact laws establishing an obligation for CE companies to support consumer devices throughout the product lifetime and have even defined the lifetime period.

recommendations to the FCC for the "sunsetting" of existing technology or device support and the introduction schedule of new technologies that could adversely affect existing devices. The impairment of retail unidirectional digital cable receivers in networks that have recently employed "switched digital" technology is an example of a case in which such a body could have acted proactively to prevent consumer confusion and uncertainty.

Joint Participation in the Approval of Standards

In addition to being the incumbent in the market for navigation devices, today's digital cable system operator is a direct competitor with retail manufacturers, and enjoys systemic advantages in the design and marketing of "CE" devices such as DVRs. The system operator is able to market a leased device to the consumer, and FCC regulations, which give the system operator flexibility to spread the cost of the device over a subscriber base, provide an economic incentive for the operator to distribute devices in aid of selling services. Given the intrinsic opportunity for behavior that poses obstacles to competitive entry, it is inappropriate for the cable system operator to unilaterally impose "one-size-fits-all," "take-it-or-leave-it" licensing terms on the fundamental technology necessary to build a bi-directional cable-ready device -- especially when such terms limit the ability to innovate and create new, consumer-friendly features. With such inappropriate external constraints, the objectives set forth in Section 629 can never be achieved.

The CE side, therefore, has taken the position that all relevant FCC regulations should encompass mutually agreed citations to national standards. Indeed, the attached proposed regulations point to standards documents that have not yet been developed; but we anticipate their completion in standards bodies before any FCC rule should adopted, making reference to these technical solutions.

Why The "Bi-directional" Plug & Play Negotiations Take So Long

Working together, the CE and cable industries did achieve a pro-competitive framework in their recommendations for "Phase I" regulations and a model "DFAST" license for "unidirectional" devices, and this framework has been accepted into FCC regulations. The parties did not reach some fundamental issues that were mooted by the inherent limitations of unidirectional devices. Even so, the negotiations over a common regulatory and licensing framework were difficult and exacting, as was the Commission's scrutiny of the ultimate joint proposal.

In now approaching issues related to competitive entry for devices with "upstream" communications ability, we do approach fundamental issues that reach back to Congress's intentions in 1996, and the Commission's in 1998 and thereafter. As outlined above, the two sides disagree fundamentally on many of these issues.

- Our view is that "competition" means offering consumers meaningful choices -- not just in purchase vs. lease, but also in design, features, usability, convenience, and integration of functions. Innovation and variety are the hallmark of both the consumer electronics and information technology industries, and consumers are the

beneficiaries. Competition is essential to rapid, widespread technology deployment, price reduction and consumer satisfaction.

- The cable perspective has been that all navigation devices, competitive and otherwise, should present cable MVPD services exactly and exclusively as if presented by a leased cable set top box ("STB") that is entirely under the cable operator's design and control. This does not allow competitive devices to contribute to innovation in the receipt of cable services, and it precludes the integration of the cable service with other features and services available to the CE device.

    - This is especially challenging with respect to the operation of PCs, which inherently are multifunction devices with a virtually unlimited range of potential applications.

- It is dangerous to competition to consider home network devices to be part of the "cable service." Indeed, Section 629 declares the opposite: Devices are a separate market, in which cable operators *may* continue to participate. However, there is growing concern that the position advanced by cable operators is that their "service" extends not only to delivery of content to a "STB" in the home, but to each and every device in the home through which a consumer may want to use content acquired from a cable service, and to every conceivable "new" service that a cable company may want to offer. Simply put, expanding the definition of "service" to include all product functions such as "traditional" television operation, PVR functionality, home-networking devices and services, and even management of portable peripheral devices, would allow cable operators to control not just every aspect of the "STB" functionality, but also every aspect of *every device in the home-network*, as well.[5]

    - Nowhere in the charters for cable operators, or in Federal law or FCC regulations, are they granted a monopoly over the functioning of navigation and home network devices, in addition to MVPD services, on their networks.

Core Issues In Drafting Proposed Regulations

In drafting the proposed regulations tendered below, our perspective is informed by core issues –

- Are competitive devices actually part of the cable network, subject to absolute control by cable operators, or is the operator's interest limited to protecting the network from electronic harm and theft of service? *We believe that Sections 624 and 629, and Part 76.1201 – 1205, provide clear answers in favor of a separate, competitive market.*

[5] Hence, there is a concern that while the Phase I framework clearly contemplated digital outputs, cable operators and CableLabs at times appear to insist that not only "navigation" devices, but *all* home network devices receiving interactive cable content may have to support cable's proprietary OCAP technology.

- Are the technologies and licenses on offer by the cable industry sufficient to meet the needs of consumers and competition with respect to entrant devices? Do they impose restrictions that are limited to those permissible in FCC regulations, Sections 76.1201 – 1205? *We believe that the presently available technologies and licenses do not pass this test.*

- Will consumers retain the right to define and control their own devices and their own home-networks, through approved digital interfaces protected by non-cable technologies? *We believe that a pro-competitive approach to such licensing issues is essential, and is required by the existing Sections 76.1201 – 1205.*

- Will competitive entrant products be able to perform all of the tasks that the leased boxes supplied by cable operators can perform? *We believe they should be able to do so, at least with respect to the cable services that are available at the time the regulations take effect.*

- Must the competitive entrant devices to be designed to perform *only* the tasks performed by the leased devices? *We believe this would be an unjustifiable stifling of competition and innovation.*

- Will cable operators, in their own leased devices, rely on the technologies on which they seek to require their competitors in the device market for devices to rely? Or will they keep their own options open? *We believe that cable operators should not require competitive entrants to the device market to rely on technologies that, in their leased devices, they are unwilling to commit to relying on themselves. This principle has been recognized by the FCC as necessary to the support of competitive entrant products.*

- Will the environment for certifying competitive entrant devices and cable applications be one that establishes a level playing field for entrants, and that limits authority over devices to that actually granted by FCC regulations? *We believe this to be essential to competition.*

- Will consumers be able to rely on competitive entrant devices, once purchased, to continue to function reliably despite changes or enhancements in network practices and offering? *This is essential to competition and forms the basis of the market for competitive navigation devices contemplated by Section 629.*

These and other issues have arisen in our negotiations, and are addressed in part by our draft regulations.[6]

[6] As we note below, particularly with respect to PCs, there are some issues that are insufficiently crystallized for us to offer even draft regulations at this time.

1. Freedom to Innovate: Technical Interfaces with Interactive Cable Services

Over the past two years, the CE group has made many proposals to introduce elements of IDCR technology, licensing, or regulation that would foster competition and differentiation by CE manufacturers, while preserving a high quality experience for cable customers.

- Earlier in the negotiations, the CE group tried but failed to persuade the cable operators that innovation in the presentation of interactive cable programming through alternative user interfaces, such as competitive electronic program guides (EPGs) for their interactive services, might help them satisfy more of their own customers than they can do with only their own EPGs.

- The CE side also proposed that standardized protocols for direct communication between customer equipment and cable head ends—similar to what is used successfully in Internet-delivered and many other services, and indeed, is used within individual cable systems on a proprietary (non-standard) basis-- be developed, building on the Phase I framework, that would preserve the essential elements of the presentation of cable services, maximize flexibility to innovate, protect consumer investment, and instill consumer confidence. The CE side proposed that a joint engineering group work on standardized protocol-based approaches with a view toward concurrently supporting both standardized middleware implementations such as OCAP as well as other independent, innovative implementations in the marketplace of competitive navigation devices. However, Cable rejected any detailed discussion of standardized protocol implementation.

Ultimately, after arguing for these options that in our view provided more flexibility, the CE group acquiesced in going forward to explore arrangements in which IDCR devices, retail and leased, that are connected directly to the external digital cable network, would run a mutually agreed version of OCAP,[7] and that such a version of OCAP must be used for an IDCR to obtain content on an interactive basis . However, this approach presents several severe challenges.

OCAP, though presented to the FCC as early as 1997 as a means of supporting the connection of competitive as well as leased devices, was not designed or developed so as to support multifunction devices with non-cable related features. Indeed, as developed and documented thus far, it is geared instead to forbid, block, or interfere with the panoply of functions that competitive, multifunction Interactive Digital Cable Ready ("IDCR") products otherwise could offer to consumers. The present version of OCAP -- designed for STBs, or for television sets that act as STBs -- presents significant technical challenges for any device that contains functions in addition to cable service. This

[7] OCAP is intended to enable presentation of interactive cable services in a uniform, controlled fashion regardless of the underlying hardware platform. With OCAP, the services are presented in the form of downloaded software applications (such as EPGs that include VOD listings) that run on devices containing an OCAP software execution environment.

approach is simply not acceptable for competition either in "CE" devices or in "IT" devices, all of which are now inherently multi-function.

OCAP provides for the exclusive access and control by the cable system operator to download through the cable plant and insert application software into the consumer–owned competitive navigation device. Per current specification and licensing language, such applications can take control of product resources and disable applications that are part of the product or were installed by the owner. Arbitration of resources is a critical issue, among others, in the ongoing discussions of how OCAP might be altered to make it implementable in a multi-function CE device. In a competitive product, access to the screen, graphics generator, tuner, memory, remote controls, storage, and other components will potentially come into contention between cable services and any non-cable services. Even with modifications to OCAP (which CE and cable are discussing), cable operators have shown reluctance to allow any changes which would result in devices not presenting interactive cable services in exactly the same way, in every detail, as a cable operator-supplied STB.

By contrast, the CE side believes that the goal in supporting competitive products is to offer consumers a better-integrated experience, bridging both their cable and non-cable services in a single device, rather than aiming simply to copy the dedicated functioning of leased STBs that are, at best, one of several external inputs to a TV, personal computer or other multifunction consumer device. In our discussions, efforts to achieve this result have run headlong into the cable objective of presentation of all interactive services by relegating the consumer-owned multifunction navigation device to the same functionality as the cable operator's leased device (*i.e.*, "STB in the TV"), regardless of the features, capabilities or potential functionality of the consumer's navigation device or the consumer's desire to use them.

For example, a consumer buying a TV with competitive navigation functions expects it to be able to receive broadcast signals through an antenna (for channels not carried by cable), include a sleep timer, display content from camcorders and cameras automatically when connected, and perhaps incorporate a digital video recorder ("DVR") that works with all inputs and functions, in addition to presenting interactive cable services. Consumers expect these features to work seamlessly and conveniently. Cable operators, however, have argued that interactive cable services must be presented in a cable-controlled manner, separate from the presentation of all other services in the product. This inevitably results in duplicative and conflicting behaviors within a multiple-function device.

The digital video recording ("DVR") feature illustrates the challenges particularly well. A competitive product might not be competitive without a DVR function. Recording is a highly desirable product feature that could make or break the marketplace's acceptance of competitive products, especially among higher-end consumers who are the natural target market for interactive digital services. Although the cable side has not rejected DVR recording in competitive products outright, it has stated that when the "DVR" Cable program guide is active, the software used to control

the recording process—the allocation of disc space, the expression of user priorities, etc.—must be under the cable operator's total control so as to replicate precisely the experience a consumer would gain from a leased STB with recording capability. Cable, rather than consumer, control of the DVR software would prevent the CE manufacturer from designing a competitive IDCR recorder that allows a consumer to integrate access to recorded cable content with access to his or her other recordings from TV broadcasts, home movies, Internet-downloaded content from PCs and other devices elsewhere in the home.

The CE side has proposed that at least part of the recording system of any DVR must be under consumer control that is independent of the cable system, even if this would result in a different experience than the one from a cable operator-supplied product. CE and cable technical experts are studying the issue, and a compromise may be reached -- but cable's insistence on replicating the STB experience is a significant hurdle to be overcome. Indeed, given Cable's preferences, t*he more sophisticated and capable the multi-function device, the more the consumer has to sacrifice in order to access even the most basic of cable interactive services.*

2. Reliability: Application and IDCR Device Interoperability

Consumers value reliability as well as innovation. In this regard, consumer expectations of televisions are perhaps higher than those for most any other electronics product. Achieving competitive availability will require that interactive cable applications and competitive products work well together. While "bugs" and "glitches" are inevitable in any complex software and hardware system, consumers will be disappointed if interactive cable services do not interoperate robustly with competitively offered products. Thorough testing of both applications and products will be necessary to reduce consumer frustration. In particular, *competitive availability will be frustrated if applications are not tested as thoroughly on retail competitive entrant devices as on the cable operators' own leased STBs.*

The industries have been working toward solutions based upon a mix of both mandatory and voluntary interoperability testing of products with cable applications in one or more testing centers. We contemplate both pre-deployment testing of products and applications before they are fielded and ongoing testing of these previously fielded applications and products as new ones come into the market.

The CE side has proposed that all cable operator-supplied applications intended for download to consumer devices, prior to implementation on a network containing commercial subscribers, pass a formal certification process conducted by a third-party facility using jointly developed criteria and procedures. The purpose of this certification process is to assure that there will be no harm or impairment to consumer-owned equipment due to introduction of an operator provided application.

For example, all cable operator applications such as electronic program guides, and on-demand content selection/operation would first be tested against a set of previously approved, known-good receivers. If/when testing is successful, the

application could be fielded, however it would also be submitted to a larger interoperability test center having a much larger array of IDCR products in order to help find/resolve issues not caught in the official testing. Significant problems noticed during this larger testing could then be factored into the required test process for applications and products in the future as well as provide a knowledgebase of "dos and don'ts" for developers.

The proposed regulations, including the new Sections 15.124 and 76.641, address CE's proposed mandatory testing of products, applications, and their interoperation with one another. We believe all involved parties, including manufacturers, cable operators, and software and content providers will also need to cooperate voluntarily to achieve reliability of interactive cable. The Commission has recently gone to great lengths to protect consumers' expectations as to the reliability of their investments in television receivers.[8]

Testing alone, however, is not enough to provide consumers with assurance that competitively offered products will work reliably. OCAP remains an unproven technology, both here and elsewhere in the world. It is on the cable industry's commitment to and reliance on this technology, more than on the technology itself, on which competitive entrant manufacturers will have to rely. Common reliance on a common IDCR interactivity standard will provide the right incentives for both parties to work to solve problems quickly. The proposed regulations would phase-in MSO reliance on OCAP for all new cable STBs that offer any interactive services until common reliance is achieved.

Consumers' ability to rely on the products they have purchased depends not only upon initial testing with applications, but also on the ability to repair and upgrade the product over time. Just as operator-supplied boxes regularly receive "patches" and updates over the cable system, competitive products may need to have their internal software updated occasionally to fix "bugs" discovered in the field. Cable operators have an existing mechanism for updating their proprietary STBs. Competitive products should be able to use the same or a similar approach.

Cable has proposed using an external party which would collect and transmit such updates over the PBS broadcast path. But in our view this approach injects an unnecessary link into the process solely to minimize Cable's responsibility to provide a path similar to their own.

By contrast, CE has proposed several approaches including (a) provision of a direct connection between the product and the manufacturer's web site using the required built-in DOCSIS MODEM to be used solely for delivering such updates (thus relieving cable of all management tasks) or (b) delivering these updates in a combined, preformatted stream directly to Cable 's central application distribution centers for delivery to CE products similar to the way that Cable delivers its own applications and

[8] All of the FCC's activity in Docket 05-24, and its underlying Tuner Mandate regulations, has been based on protecting this consumer expectation.

updates. The attached proposed regulations would enable either of the latter paths, according to existing or readily adaptable technical standards. To date, however, Cable has not engaged in technical discussions on such paths.

3. Electronic Program Guide Data

By definition, a navigation device must have a means for the consumer to find and select content. As part of the customer's subscription fees, Cable provides data for such a list to its own leased products for display via its electronic program guide. For a competitive device to compete with a leased STB, cable operators should be required to provide the same program data in a standardized format to a consumer's competitive products. This would allow a variety of innovative and competitive approaches to be developed which can simplify consumer operation of the product.

4. Content Protection

There have been vigorous discussions, involving content providers and several other interests, over whether the FCC's Subpart W "Encoding Rules," adopted in Phase I and applicable to all MVPD services, should be amended so as to give content providers and distributors an ability to deny or downgrade service, on a program by program basis, to consumers' displays and other home network products served by particular interface and content protection technologies. The CE side has been willing to discuss and consider the proposals of others, but we do not advocate any change to Subpart W. Hence we have not provided any draft changes to those regulations.

5. Licensing Issues

A comparison of the referenced technology, change management provisions, and Compliance and Robustness rules of the DFAST license agreement for unidirectional digital cable products, the model for which was negotiated by the CE and cable sides and submitted to the Commission; and CableLabs' posted CHILA and OCAP Implementers License Agreements, offered unilaterally by the cable industry, define the starting points for a model license discussion that is only just under way. While cable points to its posted agreements as indicating its preferences, the CE group points to pro-competitive aspects of DFAST, achieved in Phase I, but not present in the licenses now on offer, that should not be lost in Phase II, examples of which are --

- Technical references to versions of due process industry standards rather than to technology that may be changed on a proprietary and unilateral basis;

- change processes, for both the license and the Compliance / Robustness rules, that involve negotiations with, rather than unilateral impositions on, licensees;

- an obligation to accept additional interfaces and protection technologies on a reasonable basis, reviewable by the FCC;

- system operator mandates over product design, function, and use that are limited to those allowable under Sections 76.1201 – 1205.

Thus far in the negotiations the CE side has expressed these principles and the cable side has not rejected them, but they have not yet been the subject of negotiation.

6. Software Downloaded Conditional Access

The CE group has proposed regulations requiring future common reliance on an updated version of CableCARD that would support multiple-tuner hosts and Switched Digital signaling in Digital Cable Ready products. We are aware that the Commission is considering approval of cable operator reliance upon a downloadable conditional access technology. The CE side has not had access to either the technical or licensing terms of such a technology, so we are unable to endorse any such approach at this time. We are able to observe, however, that any regulations permitting cable operators to rely upon downloadable conditional access security must also support common reliance by CE manufacturers in order to fulfill the competitive objectives the Commission has established. Irrespective of which specific method or technology that might be adopted for downloadable conditional access, the selected method must equally support both unidirectional and interactive (bidirectional) forms of competitive navigation devices and not create any unfair disadvantage for competitive navigation devices using either downloadable technology or CableCARDs when compared with the MVPD's own navigation devices leased to a subscriber. In addition, any license for downloadable conditional access security must be consistent with Sections 76.1201 – 1205.

Seventeen months after the date set in FCC regulations for MSO system support of the existing CableCARDs, this objective has not been achieved fully achieved, so as to include operational reliability for CableCARDS (comparable to the reliability of other cable-provided or open market products). The CE side will continue to oppose, in whole or in part, any proposal, including any pertaining to downloadable conditional access, that has the effect of delaying the achievement of common reliance for conditional access beyond the July 1, 2007 date set by the Commission.

7. Unique Personal Computer Issues

Members of the IT industry have been participating in the negotiations. Although these members generally agree with the positions in this document, IT products require additional considerations due to the unique nature of a PC as an extremely flexible, customizable device. Discussion over these items is only at a very early stage, .

8. Technology Evolution: Updates to "One-Way Plug & Play" Regulations

The Commission, in promulgating the first round of digital cable Plug & Play rules, recognized the importance of technological evolution. The Part 15 and Part 76 regulations adopted at that time allow for both CE and cable companies to develop and deploy more advanced technologies than those that are cited in the initial regulations,

provided that (a) consumer-purchased products that comply with the initial regulations will continue to provide access to cable services until such time as the FCC, weighing all aspects of the public interest, "sunsets" those support requirements, and (b) new services are made available to both competitive and cable operator-leased devices on an equitable basis, as required by Section 629 of the Communications Act. The regulations also provide for updates in the technology over time, both by means of FCC rulemaking and by FCC oversight of CableLabs licensing processes.

Within these parameters, the cable and CE industries agreed to discuss, and recommend to the FCC as necessary, advances to the technical standards reflected in the regulations. We anticipate that whatever regulations the FCC adopts to support IDCR products, the CE and cable industries will be free to deploy more advanced technologies provided that products incorporating the initial standards will continue to be supported until the FCC determines otherwise, through updates to the regulations. Moreover, we expect the cable and CE industries to continue to discuss and recommend such updates.

One such opportunity for updating the first-round, unidirectional DCR regulations is upon us now. The cable and CE industries have been discussing the impact upon unidirectional DCR products of Switched Digital operations, which cable operators are beginning to adopt in an effort to save bandwidth. When cable operators move certain linear (i.e., other than "on-demand") programming to Switched Digital operation, only receiving devices containing a cable proprietary upstream signaling capability can access that programming. Unidirectional DCR products built pursuant to the Commission's current Part 15 rules do not have any upstream signaling capability and existing CableCARDs would not support such a function even if an upstream signaling capability were present in the UDCR. The CE side has proposed a technical solution, not yet reduced to a technical standard, which would enable DCR products without OCAP or DOCSIS Set-Top Gateway to access a cable system's upstream bandwidth for the limited purpose of accessing Switched Digital programming. This technology would essentially preserve the capabilities of a new unidirectional DCR product to receiver linear digital cable programming even as a system moves to the Switched Digital mode of operation.

While we work toward enabling IDCR functionality—based, in the attached regulatory proposals, upon the IDCR interactivity standard—we must also support the technical evolution of DCR products. These products, while unable to receive interactive services such as cable EPGs and Video on Demand, occupy an important market niche of smaller, secondary TVs in consumers' kitchens, bedrooms, and playrooms. As the Commission's digital tuner mandate progresses to encompass all screen sizes by March 1, 2007, many TVs which today are sold without digital tuning capability will have such tuners. Most of these TVs will be connected to cable systems, because most U.S. households are cable households. To burden these lower-cost, secondary TVs with the expense of advanced hardware and software capable of supporting interactive functionality is unnecessary. However, without some way to access Switched Digital content, these TVs may not be viable for cable consumers to use for secondary viewing. Updating the FCC regulations to enable Switched Digital reception by DCR products is

the reasonable solution to meet consumers' expectations and preserve a range of choices and price points for consumers to access digital cable.

CE's Proposed New Regulations

The Commission has asked the parties to provide, in this update report, our differing views of the regulations the FCC should put in place to foster IDCR navigation device competition. CEA's response is provided herein.

The Commission should not conclude from the fact that the CE group is presenting a complete set of regulations in our own portion of the joint filing that the proposal is entirely rejected by NCTA. From the discussions we have had, we believe NCTA would not oppose every element of the proposal. However, in order to be fully responsive to the Commission's request, we feel it is best to list a complete proposal here instead of listing only elements on which the sides have not agreed. Moreover, our negotiations have focused on functional, technical and policy issues and have not reached the stage of drafting regulations; so, although every topic in this proposal has been discussed in the negotiations, the specific regulatory language has not been.

Notes on Proposed Regulations: The attached proposed regulations, including a new Part 15, Section 124 and a new Part 76, Section 641, contain several incomplete technical references. We hope these will be filled with the completion of the ongoing technical negotiations. For example, the proposed regulations refer to an IDCR interactivity standard for use with multi-function CE devices, as discussed above. The proposed regulations also cite improvements, still under negotiation, to the existing Host-POD Interface standard to enable further evolution of unidirectional digital cable products by accommodating multi-stream operation and access to switched broadcast digital programming. A detailed documentation of the host device and software application testing programs, as well as procedures for testing host-application interoperability, are referenced and are still under development.

Proposed Part 15 Rules

- updates for DCR
- new rules for IDCR

Proposed Part 76 Rules

- updates for DCR
- new rules for IDCR

Revisions to § 76.602 Incorporation by reference.

(Note that these standards do not yet exist in any completed form; they are subject to ongoing negotiations between CE manufacturers and MSOs.)

Section 76.602 (b) is revised as follows:

Add at the end:

> (10) ANSI/SCTE 28: "Host-POD Interface Standard" {as updated WWW} *[This is the present standard, updated to add support for multiple-tuner hosts (with multi-stream PODs) and POD signaling of Switched Digital services]*
>
> (11) ANSI/SCTE 106: "DOCSIS Set Top Gateway" {as updated XXX}
>
> (12) ANSI/SCTE XX: "IDCR Interactivity" {as updated YYY} *[The CE side is committed to discussing the use of a mutually acceptable version of the OpenCable Application Platform (OCAP) as the basis for the applicable IDCR Interactivity standard. Accordingly, this reference is to a technology based upon the present OCAP specification, updated to add all necessary changes to accommodate CE devices, in a form that is reasonably implementable in CE products without compromising other product features and is subject to open and fair licensing terms that do not restrict the features of products other than to prevent harm to network and theft of service. The CE group is not yet certain that it will prove possible to produce an OCAP-based standard meeting the above criteria, so the text references to this technology are bracketed.]*
>
> (13) ANSI YY: "Interactive Application and Host Testing Procedures" {as adopted ZZZ} *[This is a standardized version of testing procedures to be performed by the Required Testing Facility: (a) the host device verification procedures, which may be self-verified after the first unit; (b) the application verification procedures; and (c) the host/application interoperability testing procedures, which include identification of the required set of previously approved hosts and applications with which interoperability must be demonstrated before new hosts and applications may be deployed .]*

Revisions to § 76.640 Support for unidirectional digital cable products on digital cable systems.

Section 76.640 is revised as follows:

In the title, **strike** "unidirectional digital cable" and **replace** with "digital cable ready".

Section 76. 640(b)(1) is revised as follows:

Delete the words "with an activated channel capacity of 750 MHz or greater".

Section 76.640(b)(3) is revised as follows:

Add at the end:

> (i) Effective July 1, 2007, all PODs provided to customers by cable operators shall support ANSI/SCTE 28: "Host-POD Interface Standard" {as updated WWW}, including support for multi-stream operation and Switched Digital signaling specified in that standard, except that cable operators may supply customers with PODs conforming to an earlier version of the ANSI/SCTE 28 standard for any customer's equipment that has a single digital cable tuner and lacks the Switched Digital signaling capability specified in the standard identified in this paragraph. Without limiting the foregoing, cable operators may provide more advanced PODs (*i.e.*, PODs that are based on successors to the standard identified in this paragraph) to customers whose devices are compatible with the more advanced PODs.

Section 76.640(b)(4) is revised as follows:

Add at the end:

> (iv) Interactive Applications.
>
> > (A) Effective April 1, 2007, upon the request of any customer, on any digital cable system that offers services on an interactive basis with the cable headend through a radio frequency upstream communication path, cable operators shall provide a set-top device that employs [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]] for the delivery of all such interactive services.
>
> (B) Effective July 1, 2008, on any digital cable system that offers services on an interactive basis with the cable headend through a radio frequency upstream communication path, cable operators shall employ [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]] in all set-top devices that are acquired by a cable operator for distribution to customers and are capable of providing services on an interactive basis with the cable headend.

New §76.641 Support for interactive digital cable products on digital cable systems.

(a) The requirements of this section shall apply to digital cable systems, as defined in § 76.640, that offer any interactive services by means of communications between customers' set-top devices and cable head ends through a radio frequency upstream communication path. Cable operators shall support interactive digital cable ready products, as defined in § 15.124 of this chapter, through compliance with the

requirements set forth in § 76.640 and with the additional requirements set forth in this section.

(b) Not later than April 1, 2007, or such later date that is set forth below at paragraph (b)(2), cable operators shall support interactive digital cable ready products, as defined in § 15.124 of this chapter, through the provisioning of services, as follows:

(1) Every interactive digital video service provided to any customer on any digital cable system shall be supplied in a version that is compliant with [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]]. This requirement shall be subject to temporary waiver for limited trials with respect to new services, and also shall be subject to waiver for any services that are delivered only to a minimal number of customers on a cable system and are no longer being offered to any new customers.

(i) To the extent any changes may occur through an open standards process to the IDCR Interactivity standard referenced above and new services are developed in compliance to the newer version of the standard, cable operators may deploy services in a form that is compatible with a newer version rather than the referenced version of the IDCR Interactivity standard. However, the cable operator also shall continue to deliver Program Guide, Pay Per View, Video on Demand, and any other services that were being delivered as of July 1, 2007 in compliance with this referenced standard in such a way that they will operate on interactive digital cable ready products as defined in § 15.124.

(ii) To assure consumer confidence in the operation of competitive devices for navigation of interactive digital cable services, as required by Section 629 of the Communications Act,

(A) Before being placed into service on a cable system, interactive applications other than those bound to the particular rendering of a program (i.e., "unbound applications") shall be verified by the Required Testing Facility described in (C), as to compliance with [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]] and shall pass interoperability testing in accordance with ANSI YY: "Interactive Application/Host Interoperability Testing Procedures" {as adopted ZZZ} in the Required Testing Facility described in (C).

(B) Cable operators shall not carry interactive applications bound to the particular rendering of a program (i.e. "bound applications") that have not been self-verified by their developer, in documentation submitted to the Required Testing Facility described in (C), as to compliance with [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]].

(C) Required Testing Facility. The Required Testing Facility is a facility representing cable system operators serving a majority of cable television subscribers in the United States, or an independent laboratory with personnel knowledgeable with respect to the IDCR Interactivity standard and Interactive Application/Host interoperability testing procedures referenced in this section. This facility will maintain a representative sample of approved, fielded interactive digital cable ready devices and interactive applications (both unbound and bound) for purposes of interoperability testing in accordance with ANSI YY: "Interactive Application/Host Interoperability Testing Procedures" {as adopted ZZZ}.

(D) Cable operators shall provide a path via headend operation for the downloading of software repairs to interactive digital cable ready devices, comparable to that afforded for the repair or updating of cable operator-supplied devices. Cable operators must activate this path for such purpose whenever such repair software is: (1) provided to the headend of each cable operator via a standard method; (2) upon download will occupy a bandwidth of no more than [TBD]; and (3) may be sent on a periodic basis no more frequently than [TBD]. The provider of the repair software shall certify in writing to the cable operator that the primary purpose of such repair software is to repair the ability of an interactive digital cable ready product to receive interactive cable services and that the software is being provided to owners of such devices free of charge.

(2) Not later than July 1, 2007, cable operators shall support communication between interactive digital cable ready devices and cable headends for purposes of interactive services in compliance with ANSI/SCTE 106: "DOCSIS Set Top Gateway"{as updated XXX}.

Revisions to § 15.38 Incorporation by reference.

(Note that these standards do not yet exist in any completed form; they are subject to ongoing negotiations between CE manufacturers and MSOs.)

Section 15.38(b) is revised as follows:

Add at the end:

> (14) ANSI/SCTE 28: "Host-POD Interface Standard" {as updated WWW} *[This is the present standard, updated to add support for multiple-tuner hosts (with multi-stream PODs) and POD signaling of Switched Digital services]*
>
> (15) ANSI/SCTE 106: "DOCSIS Set Top Gateway" {as updated XXX}
>
> (16) ANSI/SCTE XX: "IDCR Interactivity" {as updated YYY} *[The CE side is committed to discussing the use of a mutually acceptable version of the OpenCable Application Platform (OCAP) as the basis for the applicable IDCR Interactivity standard. Accordingly, this reference is to a technology based upon the present OCAP specification, updated to add all necessary changes to accommodate CE devices, in a form that is reasonably implementable in CE products without compromising other product features and is subject to open and fair licensing terms that do not restrict the features of products other than to prevent harm to network and theft of service. The CE group is not yet certain that it will prove possible to produce an OCAP-based standard meeting the above criteria, so the text references to this technology are bracketed.]*
>
> (17) ANSI YY: "Interactive Application and Host Testing Procedures" {as adopted ZZZ} *[This is a standardized version of testing procedures to be performed by the Required Testing Facility: (a) the host device verification procedures, which may be self-verified after the first unit; (b) the application verification procedures; and (c) the host/application interoperability testing procedures, which include identification of the required set of previously approved hosts and applications with which interoperability must be demonstrated before new hosts and applications may be deployed .]*

Revisions to § 15.123 Labeling of digital cable ready products.

Section 15.123 is revised as follows:

Add at the end of § 15.123(a):

", except that a unidirectional digital cable product may employ an upstream transmitter for the limited purpose of allowing customers to receive programming offered on a channel-per-channel basis [other than pay per view or video on demand] via ANSI/SCTE 28: "Host-POD Interface Standard"{as updated WWW}.

New § 15.124 Labeling of interactive digital cable ready products.

(a) The requirements of this section shall apply to interactive digital cable products. Interactive digital cable products are two-way devices that accept a Point of Deployment Module (POD), but are not limited to televisions, set-top boxes and recording devices connected to digital cable systems. Interactive digital cable products may include any or all of the features and functions of unidirectional digital cable products as described in § 15.123(a).[9]

(b) An interactive digital cable product may not be labeled with or marketed using the term "digital cable ready," or other terminology that describes the device as "cable ready" or "cable compatible," or otherwise indicates that the device accepts a POD or conveys the impression that the device is compatible with digital cable service unless it implements all of the requirements of § 15.123(b)(1)-(6). An interactive digital cable product may not be labeled with or marketed using the term "interactive digital cable ready," or other terminology that describes the device as "cable ready" or "cable compatible" via upstream interaction with a cable operator's headend unless it implements at a minimum the following features in addition to the requirements of § 15.123(b)(1)-(6):

(1) [[ANSI/SCTE 90-XX: "IDCR Interactivity" {as updated YYY}]].

(2) DOCSIS Set-Top Gateway signaling as set forth in ANSI/SCTE 106: "DOCSIS Set Top Gateway" {as updated XXX}.

(3) In models manufactured or imported after July 1, 2007, ANSI/SCTE 28: "Host-POD Interface Standard" {as updated WWW}.

(c) Before a manufacturer's or importer's first interactive digital cable product may be labeled or marketed as digital cable ready, the manufacturer or importer shall verify the device as set forth in § 15.123(c). If the device has not additionally been verified as interactive digital cable ready as per subparagraph (d), then the manufacturer also shall provide language in post-sale material as set forth in § 15.123(d).

(d) Before a manufacturer's or importer's interactive digital cable product may be labeled or marketed as interactive digital cable ready, the manufacturer or importer shall verify the device as set forth in § 15.123(c) and as extended by the procedures set forth in ANSI YY: "Interactive Application and Host Testing Procedures" {as adopted ZZZ} at the Required Testing Facility described in (e).

[9] The CE group has not yet determined the extent to which any proposed regulations would or would not apply to PCs and PC-related devices. Therefore, it may be appropriate to exclude PCs from this section and/or to adopt modified regulations for PCs and related devices, which potentially could include (without limitation) different feature requirements, technical standards, and/or testing criteria and procedures.

(e) Required Testing Facility. The Required Testing Facility is a facility representing cable system operators serving a majority of cable television subscribers in the United States, or an independent laboratory with personnel knowledgeable with respect to the IDCR Interactivity standard and Interactive Application/Host interoperability testing procedures referenced in this section. This facility will maintain a representative sample of approved, fielded interactive digital cable ready devices and interactive applications (both unbound and bound) for purposes of interoperability testing in accordance with ANSI YY: “Interactive Application/Host Interoperability Testing Procedures” {as adopted ZZZ}.